

ELECTRICAL CURRENT GENERATION SYSTEM***ABSTRACT***

An electrical generating system consists of a fuel cell, and an oxygen gas delivery. The
5 fuel cell includes and anode channel having an anode gas inlet for receiving a supply of
hydrogen gas, a cathode channel having a cathode gas inlet and a cathode gas outlet, and an
electrolyte in communication with the anode and cathode channel for facilitating ion exchange
between the anode and cathode channel. The oxygen gas delivery system is coupled to the
cathode gas inlet and delivers oxygen gas to the cathode channel. The electrical current
10 generating system also includes gas recirculation means couple to the cathode gas outlet for
recirculating a portion of cathode exhaust gas exhausted from the cathode gas outlet to the
cathode gas inlet.